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OBJECTIVE STANDARDS AS A MEANS OF CONTROLLING INSTRUCTION AND ECONOMIZING TIME[1]

THE contents of the Year Book of this society seem to me to show very plainly that the movement for measurement in education is rapidly entering upon a second phase of its development. Not so very long ago the questions being discussed were whether or not anything worthy the name of measurement was possible in education, and even if possible, whether it was to be desired. To-day hundreds of school men have proved that very many educational products may be measured with ease and precision, and nearly all of those same men are ready to testify that the effects of their measurements have been wholly beneficial. Our immediate problem, to-day, therefore, is that of finding the best ways of making objective standards, derived from measurement, of direct practical value in controlling instruction and in economizing time.

I think most of you will agree with me that among the many aims of the elementary school that of giving the child an adequate equipment of the fundamental skills by means of which all mental work is done is one of the very important aims. For his own sake and for the sake of our civilization, as a whole, every child needs to acquire a certain degree of skill in reading, writing and reckoning, and it is precisely in this field that measurement is of greatest service. For whenever we deal with a mechanical skill, it is not the skill itself that will ever be called in question, but the *degree* of skill, and all questions purely of degree can be settled by measurement only. For instance, if you advertise for a stenographer, every applicant for the position who understands what is wanted will be able to take dictation in shorthand, and to transcribe her notes, but few of them may have the *degree of speed and accuracy* which would enable them to do your work satisfactorily. If you wish a bookkeeper, every applicant will be able to add, but again few of them may have the necessary *degree* of skill in addition to do satisfactory work, and here, too, degree of skill will be expressed in terms of speed and accuracy.

Now measurement has shown that school work all over the country is very inefficient because there is an enormous range in the degrees of skill developed by school training, and because few of the children finally attain to degrees of skill which are adequate for the demands of social life. For instance, school superintendents, teachers, college professors, graduate students and such other adults as take summer courses in educational measurements have been found to vary in their rate of reading from 90 words per minute to over 500 words per minute, and in their skill in understanding and remembering what was read as measured by their ability to reproduce the same to vary from a reproduction of 20 per cent. of the subject-matter to one of over 90 per cent. For eighth-grade graduates, generalizing from measurement of large numbers of children in many states, it is possible to say that about one child in ten can write a letter or an original story without mis-

[1] Address delivered before National Society for the Study of Education, Cincinnati meeting, February 22, 1915.

spelling at least one word out of every hundred written; only about one child in seven can add examples composed of nine three-place figures at the average speed for his grade and with perfect accuracy, that about one child in three can write from dictation at average speed for his grade and with a quality of penmanship equal to quality 12 on the Thorndike scale. As long as these conditions prevail, school work will not be satisfactory to the men and women who pay the bills, whatever contrary opinion you and I may hold as to the value of our efforts.

In my judgment the first essential step in the improvement of the efficiency of teaching is the clear objective definition of the degree of skill to be developed at each grade and for each phase of each subject. Accordingly, in the small contribution I have been able to make to the *Year Book* of this society, I have listed a number of such objective standards which, it seems to me, are of practical value for daily use in the classroom. But whether or not you agree with the actual standards given is an unimportant detail. All standards adopted at present must of necessity be tentative and experimental. They can be made final only after a vast amount of research work has been completed along the pedagogical, psychological and sociological phases of the subject. What I want to urge is the incorporation into courses of study, and the use for all purposes of supervisory control, of standards representing objective definition of the degrees of skill that should be produced by various phases of school work.

I do not want to discuss to-night the question of the validity of the standards suggested. At the same time it is with considerable satisfaction that I can ask you to note the agreement between the standards for speed of writing set up by Professor Freeman in his contribution and those I give, although mine were derived by quite another method. In quality, too, the agreement with his "minimum" quality is close. Similarly, Professor Strayer recently told me that in such use as he had made of my tests in arithmetic, the standards set had seemed to be valid. Professor Starch's recently published rates of reading, while determined on a different basis from my own, show no great variation from my standards. I am going to hope, therefore, that all the experimental work upon which the suggested standards are based will stand the test of verification equally well. But whether it stands or falls, what I wish to accomplish to-night is to direct your attention to certain logical consequences of the setting up of such objective standards.

The first of these is the doctrine of the limitation of training. Formally stated this principle is that in the development of every mechanical skill a level will ultimately be reached where the law of diminishing returns makes it uneconomical to continue the training. Put in a different way, it is possible to say that no matter how important any skill may be, there will always be a degree of skill beyond which it will not pay to go. Up to the critical value, the skill may be of fundamental importance; once the critical value is passed, however, the skill in question ceases to be a factor in determining the efficiency of the individual.

Professor Thorndike pointed out in his monograph on handwriting that when a child's handwriting has reached a level of merit equal to quality 12 or 13 on his scale, further time spent in direct drill on handwriting is wasted. The time might much more profitably be given to learning typewriting, for instance. We all know that if the whole school time were given up to handwriting alone, a very much larger percentage of children than at present

could be taught to write copperplate. Quality in handwriting, however, like most other mechanical skills, is a *relatively unimportant product of school training.* Every one, without exception, needs to learn to write, but the elementary school will have discharged its full duty when all the children can write with reasonable degree of speed and quality. My point is that reasonable in speed does not mean more than 90 words per minute, and reasonable in quality does not mean more than quality 12 on the Thorndike scale, or quality 60 on the Ayres scale. Therefore, as soon as you adopt such objective standards, and continue to give handwriting drill to children of any grade who equal or exceed these degrees of skill, your work is inefficient; for you are wasting both the child's and the teacher's time and effort. Conversely, the efficiency of your handwriting instruction should be judged by the percentage of your graduates who finally reach these standards.

Precisely similar statements are possible for all the mechanical skills. I am well aware that in advocating the attainment of standard degrees of the mechanical skills by direct drill I am running counter to many of the accepted theories of the day, just as in advocating that children who have attained the standard should be excused from attending the drill class, I am running counter to the accepted form of class administration. It is my experience, however, that well-motivated drill is not only acceptable to children, but is absolutely necessary for the great majority. It is true that the able child through the incidental daily use of such a skill as spelling, for example, will attain to standard ability without direct drill, but those who have wished the "incidental" theory of developing mechanical skills on the educational world based their theory on a few selected cases. I estimate that not more than five children out of a hundred will profit to a satisfactory degree by such incidental training; that for ninety-five children out of one hundred there must be specific drill directed toward the attainment of an objective goal. I grant that the drill must be self-directed to be effective, and I would safeguard it by measurement, before, during and after the drill, but I, for one, believe that properly conducted drill will always form an essential feature of efficient teaching.

I hope you have noted, however, that objective definition of aim not only defines the product desired, but explicitly *limits the training.* This is one of the very great benefits resulting from the adoption of standards. Both teacher and child have an absolutely definite task before them, and a means of telling when that task is completed. Moreover, each teacher is left free to meet the standard in any way he sees fit. Under our present methods of class drill, a few children get all the benefit and our high average values are caused by the excess and unprofitable training of these few. On the other hand, if the efficiency of the teaching is judged by the percentage of the class membership which attains the standard, the emphasis is placed on the progress of individuals toward the desired goal, and there is no incentive to carry the drill beyond the point where it ceases to be productive. To be sure efficiencies determined on such a basis are, at present, absurdly low, ranging from 10 to 20 per cent. But there is experimental evidence to show that this is not a necessary condition. I predict that in a few years the efficiency of school work *measured on precisely this same basis* will reach 60 per cent. and the work of really able teachers may go as high as 85 per cent. to 90 per cent.

This is a very important point and I

hope I shall not be misunderstood. It is the common belief of many superintendents that *any* results may be secured in any subject by giving *enough time* to it. Many say, for instance, that the sole benefit from standard tests and measurement is that they stimulate teachers to give more time to the subject tested, *and*, they usually add, the teachers take the time from some other subject not tested. This is precisely what standards are to prevent. You all know that the weak teacher will tend to emphasize the mechanical phases of the subject, and to neglect the more difficult thought side which makes larger demands upon her time and skill. Objective standards, however, if administered from the point of view of limitation of training say, in effect, to the teacher: "Thus far shalt thou go and no farther; the development of this degree of skill is all that is desired—further development may safely be left to incidental training." Objective standards, properly administered, furnish one of the very best means of supervisory control. They leave every one concerned free to follow their own methods, but they stay on the job twenty-four hours a day, and three hundred and sixty-five days in the year. They can not be put on and off at intervals corresponding to the visits of the supervisor.

One further consequence of the objective definition of aim needs discussion. I refer to the resulting economy of time. In order to take advantage of the possible saving of time, special class-room methods have to be devised which have as a basis tests at the beginning of the year to determine which children need drill, tests during the term to determine the effects of the drills given, and tests at the end of the term to determine the final product. There must be, also, provision for the elimination from the drill class of individuals at any time the standards are reached, and for the reentry of individuals into the drill class if at any time the ability generated by the drill should begin to decay under the strain of use in applied work. In Detroit we have such a scheme of class-room management in successful operation for one type of drill work, the four operations with whole numbers, and we are now extending it to include writing and spelling. I was astonished to find, in checking up the time cost for one class of twenty pupils, that the total time set free in twelve weeks by excusing those who had reached the standard amounted to 1,460 minutes, or 13 per cent. of the total time given by the class to the drill work. Other classes gave similar results. Economy of time is, therefore, a second desirable consequence of objective definition of aim.

If I have made myself clear, you will see that standardization of school products in the mechanical skills has for its ends both the certain development of optimum ability in just as many children as possible, and the elimination of useless drill; that standards furnish a valuable means of supervisory control, and that, if administered from the point of view of eliminating those who do not need further drill, they make for economy of time and efficiency of teaching. I very much hope this society by its plans for the future may further the work of determining optimum objective standards, and give to the doctrine of limitation of training the formal approval it deserves.

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DETROIT

PRINCIPLES OF AIM, ORGANIZATION AND METHOD IN GENERAL SCIENCE TEACHING[1]

IN this paper, and, I think, in the discussion of this question generally, we are

[1] Presented before the Science Teachers' Club, Teachers College, February 20, 1915.

thinking of the education of boys and girls of from twelve to sixteen years of age, and, on the whole, in grades seven to ten inclusive of the public schools (the last two years of the elementary school and the first two years of the high school). We are thinking of these children in large numbers. They have the interests, curiosities, abilities and needs of average children of these ages. Some, dwelling in cities, are, perhaps excessively, stimulated by the artificial noises, sights, mechanisms, pictures, social contacts and pressures of civilized urban society. Some have their naïve curiosities too early sated and, in an intellectual hothouse atmosphere, these grow oversoon into the sophistications of prematurely ripe little adults. Some, in village or in country, live amidst a wealth of natural phenomena, but are associated with no interpreters. A few—and among them some of the best minds—early acquire reading habits, and find much satisfaction in verbal approaches to science—reading the descriptions and interpretations made by others, but remaining incurious as to the objective realities themselves. Many can, and, even with meager opportunities, do become permanently interested in the utilitarian aspects of science—those discoveries and applications leading to the harnessing of water, steam and electricity, to the navigation of water and air, to successful combat with tigers, floods and bacteria, to the exploitation of underground minerals, forest woods and soil fecundity, to breeding better plants, animals and men, and to promoting defence, security and justice.

We are thinking, too, that these youths are to be educated in and for an age and country in which we have attained relatively complete, trustworthy and accessible explanations of the almost uncountable phenomena which, to the natural senses, or to the senses as reinforced and sensitized by instruments of precision, appeal to us from the skies above, the soil and rocks beneath, the air about, and from our sustaining bodies, our guiding minds and the human groups that make our society. They are to be educated in and for a world in which man has made of his analyzed and tested knowledge and his scientific method, means of controlling natural forces and material resources towards his own multiplication, security, health, comfort and spiritual uplift.

In a somewhat vague and general way we are purposing that, by means of education in general science, we shall inspire and assist these youths that they may, in appropriate degree, take satisfaction in comprehending in their scientific aspects those manifestations of nature, on the one hand, and those works of man, on the other, by which they are environed. Because of this comprehension we have faith that they will lead better and fuller lives themselves, and will be more companionable and useful members of the larger society in which they are to live as adults. Then, too, we expect that each one will, in a measure, derive from these studies some form of specific knowledge, power and interest that will guide and reinforce him when he comes to do his share of the world's needed work.

But vague aspirations and aims, useful as they are in their way, will not make educational programs for us, any more than philosophy will bake bread. It seems to me that, notwithstanding the widespread interest in general science instruction in recent years, an interest which has expressed itself in the writing of many articles and the compiling of numerous books, we are still not within sight of the promised land as regards a moderately complete, definite, consistent and concretely illustrated theory of the aims of such instruction. And, for

my part, it seems hopeless to expect any effective organization of the subject, or any considerable discovery of successful methods of teaching it until we shall have such a theory so stated and exemplified that the average educator can understand it, experiment with it, and test its results in operation. Here and there we find very attractive fragments of such a theory or hypothesis of aim, just as here and there we find very suggestive instances of good subject-matter, organization and method suited to general science instruction. But all these are only suggestive; they are not conclusive because they are so fragmentary, so unrelated to a comprehensive theory of education, and so lacking in definite orientation towards a larger synthesis of the principles of educational aims. Hence my conviction that those who can do constructive thinking must work towards an ample, extensively analyzed, and concretely illustrated working hypothesis of aims for general science teaching, while those of us who can not do such constructive work must set up and persistently maintain a demand—an insistently shouted demand—that somebody shall supply such working hypothesis.

May I, therefore, in addition to crying aloud this demand, essay also some constructive suggestions as to how I think work in the making of a comprehensive hypothesis as to aim, and, thereafter, in formulating courses of instruction and devising methods of instruction, must proceed?

It goes without saying that we must comprehend, describe and classify the wealth of natural phenomena and of practical applications of science which are to constitute the materials and means of this study.

It also goes without saying among modern educators that we must study (in the profounder scientific sense) the native capacities, the acquired interests and powers, and the probable needs (cultural and civic as well as immediately practical) of the children whom we are to teach.

But we must go farther. We must define and test certain theses, negative as well as positive, as to education in general science for youths from twelve to sixteen years of age. As examples, I submit the following:

(*a*) The primary purpose of general science instruction for youths from twelve to sixteen years of age should be to elucidate, to explain and to interpret, in degree appropriate to the youth and modest demands of these learners and by means of genuine and vivid experience, the important facts and simple principles of accessible natural phenomena and of significant and easily comprehended applications of science to human well-being.

(*b*) Secondary purposes, which are to be definitely subordinated in teaching processes, and to be realized, if at all, only as by-products, are: (1) The intellectual grasp of underlying principles and laws; (2) the mastery, as working ideal and specific habit (as opposed to appreciation and intellectual comprehension) of any department of scientific method; and (3) the mastery for use in a practical or vocational sense (as distinguished from development of appreciation) of scientific knowledge or technique.

The controlling aim in general science instruction, then, may be otherwise described as a phase of education for *intellectual* nurture or *feeding-in*, and for the satisfaction of natural or easily stimulated instincts to *know*, to *understand*, to *appreciate*. The results of this teaching are not to be measured in terms of capacity to *give out*, to *express*, to *do*.

(*c*) The *scope* or *range* of natural phenomena and cases of applied science to be included in a program of general science instruction should be great—theoretically, as great as all the available resources of

human knowledge, and limited only by the capacity of the learner and the accessibility of the materials.

But for practical purposes the subject is here restricted to the phenomena and applications of *natural* science as ordinarily understood, reserving the fields of *mental* and *social* science for corresponding treatment as separate studies.

(*d*) But while *general* science will use phenomena and applications from the fields described and delimited by such terms as physics, mechanics, optics, chemistry, biology, botany, bacteriology, astronomy, geology, mineralogy, meteorology, physiology, anthropology, agriculture, photography, dietetics, hygiene and animal eugenics—to name but a few—it should purposely and consistently ignore these historic classifications made by mature and trained minds and even the terms describing such classifications. General science must have its own working classifications and categories, but those must be based upon other considerations, such as native and acquired interests of learners, accessibility of the phenomena and applications to be studied, and the local and contemporary significance and appeal of these phenomena and applications.

Much study and experimentation will be required to make these working classifications. For example, the naïve curiosity of the learner—the desire to know for its own sake—will be a secure basis for some groupings; while the desire to *control* or to *use* will do for others. The *near* and the *concrete*—if not so near and so concrete as to be commonplace—will often prove preferable to the remote and the abstract, but not invariably. Tigers in India, volcanoes in Alaska, comets, and the origin of man may prove to be comparatively vital and useful topics. The contemporary and novel—aeroplanes, big howitzers, a new canal—may be more available than the remote in point of time at certain stages of interest, while at others the North American ice cap, the carboniferous age, the Roman galley and the prehistoric arts may be best to hold the attention.

(*e*) The *whole program* of general science instruction must be very extensive, to the end that from the standpoint of any one school or teacher or grade or pupil it may be almost indefinitely flexible. It should be so administered that, while a *quantitative* requirement may be imposed as to the amount of time which shall be given to it or even as to the general amount of ground that must be covered for credit recognition, this *quantitative* requirement must never be carried to a point involving the assumption that any two schools or grades, or even pupils, shall necessarily have traversed the same ground, handled the same topics or units, or even sampled the same larger classifications. As in the cases of literature, songs and pictures, the available riches of science for purposes of comprehension and appreciation are far beyond the reach of any one school, grade, teacher or pupil. Hence, while the whole available wealth should be made as easily accessible as leaflet, picture, mechanical device and personal contact can render possible, nevertheless each learning agency—school, grade, teacher, pupil—should have wide option, subject to certain general requirements as to quantity of participation and quality of learning, to be hereafter determined.

(*f*) The last thesis is conditioned on the further thesis, implicit in (*a*) and (*b*) above, that in the present state of educational knowledge it is unwise, harmful and even impertinent for educational theorists to delimit particular divisions of general science, or principles or topics therein, as being of relatively superior importance.

The criteria for such selection or delimitation, it is here contended, do not yet exist. At any rate, the burden of proof rests on the person proposing such selection as preliminary to such delimitation, to establish the validity of the educational aims in the light of which he would make such selection.

(*g*) It is indispensable, once the aims of general science teaching are acceptably formulated, that the wealth of materials available should be organized into suitable *teaching units*, each unit presupposing a fair assignment of time, method of attack and result to be mastered. The pedagogical principles to guide in the organization of these teaching units are yet to be discovered and stated. Historic pedagogical units, *e. g.*, question and answer (catechetical unit), lesson, chapters, topics, are all unserviceable here. Some of the desirable learning units—those involving constructive activity and practical achievement—may well be called "projects"; but certainly not all of them can properly be so named.

Suitable teaching units should:

1. Require enough time to provide effective stages of approach, inquiry, organization and conclusion; but not so much time as to fatigue and produce satiety. One lesson period is usually too short a time, a half year too long.

2. Have an integral character with fairly definite boundaries.

3. Leave at the end of their study, a sense of substantial achievement—satisfaction of curiosity, discovery of cause, realization of use, the rendering of a practical service.

4. Lend themselves as to process and outcome to acceptable means of communication—verbal report, demonstration, or exhibition of product whereby the learning stages can be socialized.

5. In some cases—but not in all—lead to practicable achievement, in the course of which science has been learned, discovered, applied, *e. g.*, making of photographs, making of explosives—in general, the project.

6. In many cases—but not in all—involve practical or sense contact, first-hand inquiry, using materials, visiting, taking machines apart, conducting experiments, etc. But in some cases purely second hand and abstract approach, *e. g.*, composition of sun's chromosphere, production of crude rubber, etc., may be quite acceptable.

7. In many cases center around the answering, to the degree which youthful capacity permits, and as a result of concrete contact and experience where practicable, a multitude of thought-provoking questions, *e. g.*, What makes the electric car go? How can I make a pop-gun? How (or why) does freezing water break a pitcher? How do birds know where to migrate? What is a comet? What causes earthquakes? Do all bodies float on water? Why does dynamite explode downward (as reported)? What processes are involved in getting water under pressure into the house? How can we prevent milk from souring?

(*h*) Qualitatively, instruction in general science must not aim at exhaustiveness of knowledge, mastery of abstract principle or formula, capacity for detailed expression, or power to make definite applications. Unfortunately, pedagogy has not yet formulated and described *qualitative* standards of instruction, so analogical illustrations are necessary. General science instruction should not seek the kind of mastery now associated with the study of Latin, algebra, physics or drawing. Rather, the learning standards should be more comparable to those which we should set for an appreciative reading of literature, or knowledge of geography through travel. We hear good music, see good plays, take up lines of good reading in our homes, take

journeys. These, rightly organized, give *culture* of the best sort. Similar standards should apply in general science.

It should be assumed that, for pupils remaining in school, the period of general science instruction will probably be followed by another, in which one or more of the organized sciences will be studied in rigorous fashion. Here mastery of principles, attainment of scientific method and development of ability to express and apply the results of such learning will be made primary aims. For some this will constitute a part of vocational study, and for a few the satisfaction of natural interest in exact "pure knowledge." This period may come earlier in life if the "nurture" requirements suggested shall in the future be earlier met through improved elementary education.

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SHAMELESSNESS AS REGARDS MATHEMATICAL IGNORANCE

IN the preface to his inspiring book entitled "Easy Mathematics" Sir Oliver Lodge remarked that "the mathematical ignorance of the average educated person has always been complete and shameless." That this shamelessness is not due to a lack of general appreciation of the importance of mathematics is proved by the fact that school mathematics has been steadily gaining in favor in most of the civilized countries. Not only was there a remarkable increase as regards school mathematics during the nineteenth century, but the first decade of the present century has witnessed important advances. In reviewing the educational progress of the decade and commenting upon the tendencies in our high schools the Commissioner of Education in his report for 1911 says:

> Latin is holding its ground; French and German are gaining; algebra occupies a large share of time and is steady; geometry is gaining; English and history have gained materially; all the older sciences, rather strangely, are relatively falling off.

That there is an unusual shamelessness as regards mathematical ignorance scarcely needs emphasis, and various reasons for this fact have doubtless presented themselves to those who have given thought to this matter. Among these reasons is the fact that in view of the close relations between various mathematical results it is unusually difficult to understand the more advanced results without first mastering those which precede. The student who has failed to fully master one part is therefore more apt to get into trouble in his attempt to understand what follows than is the case in many other subjects. This tends to make it harder for the student who studies only when he has no other important matters to attend to. There are, however, other reasons for the shamelessness of mathematical ignorance, which lie deeper and are perhaps more instructive. One of these relates to mathematical methods and has also historical interest.

The method in algebra according to which we use special symbols for the unknowns may be described brusquely as a method of labeling our ignorance as regards certain things. From this standpoint elementary algebra may be described as the science in which we start out by acknowledging ignorance, then we label this ignorance and finally we study relations pertaining to the thing or things thus labeled with a view to the acquisition of enough knowledge to dispense with these labels. This mathematical method is very old, since it is used in the earliest mathematical treatise which is now known; viz., in the work of the ancient Egyptian scribe Ahmes, which was written nearly four thousand years ago. Since the days of

Descartes the last letters of the alphabet have been commonly employed as labels of this kind. The fact that the things labeled in this manner are generally numbers which can be determined from the given conditions and which we could obtain directly if our intellectual insight were sufficiently clear deserves emphasis, since it is less easy to acknowledge ignorance about such things than about things where it may be assumed that all are equally ignorant.

Shamelessness about ignorance is naturally cultivated in an atmosphere where we continually use symbols for the unknown, and this kind of shamelessness is often the first step towards knowledge. It would be difficult to estimate the effects resulting from the use of special symbols for unknowns in our elementary courses in mathematics. The fearlessness as regards acknowledging ignorance, which is cultivated by the use of such symbols, and the sudden transition from ignorance to complete knowledge which results from the solution of one or more equations, are factors of great importance in the educational development of the young. The fact that the first letters of the alphabet are generally used to represent the knowns while the last letters are used to represent the unknowns directs attention repeatedly to the existence of these two kinds of things and to the need of dealing with both.

While a study of elementary algebra thus tends to cultivate an open acknowledgment of ignorance, the study of elementary geometry is often still more influential in this direction. Instead of beginning with self-evident truths as our forefathers did, we now begin with postulates or assumptions. Instead of proving that the sum of the angles of a plane triangle is equal to two right angles, we now tell the young students that this theorem can never be proved unless we make certain assumptions which are practically equivalent to assuming the truth of the theorem. Instead of delighting in the everlasting truths which geometry opens up for us we are apt to direct attention to the fact that if we had started with different postulates we might have reached different conclusions. Instead of one immutable divine geometry there are now many geometries. Even such apparently evident axioms as the one which affirms that the whole is greater than any one of its parts, are assailed by the statement that the most useful modern definition of an infinite aggregate is that a part of this aggregate is equivalent to the whole.

Shamelessness as regards mathematical ignorance is also promoted by the fact that modern developments show that some of the greatest thinkers of the past made assumptions which are now known to be contrary to fact. When told, for instance, that Sir Isaac Newton assumed that a continuous curve has a tangent at every point, while Weierstrass gave instances of continuous curves which do not possess tangent lines, many are inclined to say that what a Newton failed to see they are not ashamed to miss. Not only have many of the prominent mathematicians made false assumptions but they also committed other serious errors. A French periodical entitled *L'Intermediaire des Mathématiciens* has been giving since 1904 occasional lists of errors committed by noted deceased mathematicians. The latest of these lists appeared in the April, 1914, number of this journal and includes the following well-known names: Galileo, Euler, Lagrange, Laplace, Fourier, Abel, Cayley, Hermite and Lie.

Sensitive teachers of mathematics are doubtless often disturbed by the apparent shamelessness on the part of students, as

well as on the part of some older educated people with respect to mathematical deficiencies. As far as this apparent shamelessness is due to indifference it deserves serious consideration, but when it is due to some of the other causes noted above it may be merely an expression of unbounded respect for mathematical achievements in view of the great difficulties which beset the path of the mathematician. In modern mathematical instruction clearness as regards algebraic operations has been promoted by a strict and open adherence to the rule that division by zero is barred from mathematics. On the other hand, our geometrical intuitions are continually trodden under foot by modern views in regard to the infinite manifold and the one-to-one correspondence between the real numbers and the points on a straight line. For instance, if some one tells us that the simple equation

$$y = 1/(x + 1)$$

shows that there are as many points on the line segment from zero to one, as there are from zero to infinity, since y moves only from one to zero as x moves from zero to infinity, and to each value of one of these two variables there corresponds one and only one value of the other, we readily assent to the clearness and force of the argument. On the other hand, the fact that there are as many points on the finite line segment from zero to one as there are on the infinite half line from zero to infinity, which includes this segment, is too astounding to be readily accepted notwithstanding the simplicity of the proof.

The tendency in mathematics towards unification, which has led, in particular, towards establishing a one-to-one correspondence between the points in space and sets of numbers, has also led to some apparent contradictions between our geometrical intuitions and logical deductions. In these cases the question naturally arises which one of the two should yield. In modern times it is customary to assert that in case of conflict the geometrical intuitions must yield. This fact is partly expressed by the statement that the modern tendency is towards arithmetizing mathematics. As early mathematical instruction is largely based, for the sake of simplicity, on geometrical intuition, it might appear that the way of the mathematical student was made unduly hard by first cultivating geometrical intuition and then exposing the apparent contradictions to which this intuition may lead. Scientific experimentation does not avail here since the refinements in mathematics extend infinitely beyond those attainable by physical measurements.

For instance, the refinements relating to the difference between points on a line corresponding to rational numbers and those corresponding to irrational numbers are beyond all measurements. The fact that an infinite number of rational points lie between any two distinct points no matter how close these may be to each other, and that there are irrational points between these rational points opens up a new world. If a plane were supposed to be composed of rational points and we would conceive the continuous motion in it of such a figure as a square, then parts of it might disappear entirely, such as the two opposite sides, or even all the sides, and reappear in a moment. That a point might travel along a straight line through such a plane without hitting any of the points of the plane appears at first as almost inconceivable.

As such mathematical refinements are becoming better known through the more advanced training of our teachers, it is evident that mathematics is gradually becoming the wonderland land of thought in place of the dreary, monotonous field of calculations, where the calculating machine appears superior to the human mind. The

clock-like tick, tick of the mathematician's mind is being transformed, in the opinion of many, into thought pyrotechnics where the useful is merely a by-product, and where many accepted truths appear stranger than fiction. The highly imaginative language relating to such fields as the geometry of n-dimension lends itself readily to fanciful constructions which afford superficial contact between the mathematician and those whose speech is largely controlled by uncurbed and riotous imaginations.

Mathematics doubtless both loses and gains by the publicity given to developments leading to very unexpected results. As these developments are often based upon considerations which require close and protracted reasoning the results are accepted by many without proof, and this leads to a keen sense of a lack of mathematical knowledge. Numerous evidences of this lack reveal the large amount of labor necessary to remove all such deficiencies, and the sense that very many others are in a similar condition tends to a cheerful acceptance of this condition on the part of those who wish to enliven their fellows as much as possible. Hence the common exhibitions of shamelessness as regards mathematical ignorance need not discourage those who believe in the wholesome influence of school mathematics, and who would regret to see a diminution in the amount of the mathematical elements in the regular education of the young.

G. A. Miller
University of Illinois

THE SELECTION OF COUNTY SCHOOL SUPERINTENDENTS[1]

So large is our country, with such varied conditions, that often it is expedient to explain even so witty a title as this lest the point of it be lost by some through no fault of their own. The joke is that, in several states of the union, the county school superintendents are at least nominally selected. Elsewhere, they canvass for nominations and elections as do all other politicians, of course, in democratic America. Their assets of fitness for office are enthusiasm in directing attention to themselves, skill in side-tracking other candidates for nomination by their own party, and luck either in facing less popular opposing candidates or in being parts of the mass that enjoys the landslide into office.

At the present time, there seem to be about 2,500 county school superintendents in the thirty-nine states with such officers. They appear to draw about $2,750,000 total salaries for this service of rural-school supervision. In the same states there seem to be about 1,000 urban-school superintendents drawing about $1,500,000 for their service of urban supervision. In these same states there is no urban superintendent who is politically nominated and popularly elected upon a party ticket.

Once in the presence of this ironical question of the selection of the county school superintendent, we find ourselves fronted, flanked, backed, undermined and overclouded by some facts for which adequate epithets fail to appear. The case leaves us without emotional outlets to relieve our feelings and to let us think closely and consecutively as we should in order to understand and then to act properly in the premises.

Through all ages in all lands, the man of the outdoors has been the pagan, the heathen, the barbarian, the natural, while the man of indoors has been urbane, polite, civil, refined. Between the ruralite or hayseed, the backwoodsman or countryman and the citizen, there has been an

[1] Paper read before the Round Table of State and County School Superintendents, Meeting Department of Superintendence, N. E. A., Cincinnati, February 25, 1915.

abyss of pride, of resentment, of misunderstanding that finds upon the side of the citizen its ultimate contempt of the countryman in the modern movement to urbanize the fields and thereby to save their denizens. That the country has a mission as such is beyond the understanding of most of its city-bred would-be reformers.

In all lands through all ages, the city has drained the country of its best. The machinery of economic civilization has, as its main plan, the centering of endeavor and of opportunity in the city as evidenced by banks, by railroads, by warehouses, by stores, by factories and by newspapers. And yet though, with its products, the country builds and forever rebuilds the city, and with its men peoples and forever repeoples it, nevertheless the country is forever upon the defense, forever humbling itself before the city.

Let no man who would not appear before the Muse of History ridiculous, or, what is worse, inconsequential, omit to notice and to believe and to think and act accordingly that the country alone is permanent, that it nurses the essential instincts and passions of humanity, brings to birth the prevailing generations, is indeed the true and only mother of the race. The familiar economic truism that one farmer feeds his family and six other families is not nearly so important as the sociological truth that his own family is certain to outnumber six city families within but four generations and to supply the preacher, the poet, the mechanic and the statesman of one century later. It may be well to reform the country, but it would be ill indeed were we so to reform it as to subvert it from its historic purpose of being the faithful culture-bed of the bioplasm of the human race.

This means that the country is not to have night-life, or regular work six days a week and ten hours a day under taskmasters, or great persistent anxieties of any kind. Like a good mother, the country needs peace and her own way.

The rural country might indeed get on well alone. Cities are not indispensable to nations, and they render relatively slight services to the country. It is, of course, not true that cities are useless, and far from true that they are essentially pernicious, but it is entirely true that the contempt for the country evidenced by citizens and the humility of countrymen in the presence of citizens with the rural delight in the city are, with the frequent perversity of things human, exactly in the reverse of their merits.

The service of the city to the country may be generalized in the proposition that all progress springs from conflict. It must be remembered, however, that crushing defeat is often worse for the victor than for the victim. The domination of cities over nations has involved country, city and nation always at last in a common ruin.

The bearing of these considerations upon the question before us now is so obvious that it seems a work of supererogation to proceed to make any detailed applications. The business of the educational statesman is to save the country for the sake alike of city and of country. And saving the country means a deal of letting it alone to save itself as it normally will and does.

Here we must indulge ourselves in a sharp demarking of the typical citizen from the typical countryman according to two principles. The man of the city thinks economically in the terms of the weekly wage or monthly salary. He is short-sighted and lives from hand-to-mouth. Divorced from a payroll, he is distrait. He is like a man overboard at sea without a plank upon the waves. But the man of the country thinks economically in the

terms of the cash from the annual crops. He is far-sighted else he die. He employs himself, and his fields and cattle pay him. We must remember that nearly all citizens are wage-earners dependent upon others for livelihoods. But nearly all countrymen are following an independent livelihood, as Froebel prayed that all men might. Wage-earning farmhands are few. Many of them have houses and gardens and cattle, and some have shares in the crops. Living by the year, not by the month, living by no man's favor, living with an eye upon the sky and not upon the clock—this characterizes the countryman.

Now the country-school supervisor exists solely to promote the general welfare, and especially the country welfare, which is the basis of all welfare, as we have observed and remarked, no doubt with but little need, other than convincing hearers and readers that we also stand upon terra firma. However severely we may censure the conditions of country-school supervision, the censures proceed from a clear notion that the country exists primarily and mainly for itself that it may continue to save the nation.

More than half of all the teachers of America have county school superintendents as their chief local educational supervisors. Indeed, almost one half of all our teachers have no other school supervisors than such superintendents. Thirty-nine of our sovereign several states have county school superintendents. The notable nine without such officers are the six New England states, New York, Virginia and Nevada. Virginia has a modified county system. In strict terms, we might include even New York in the county system list.

In the states with county school superintendents, there exist various methods for getting persons into this office. The prevalent method in the north is that of popular election upon party tickets. The prevalent method in the south is that of factional scrambling for the place upon the ticket of the necessary race-religion commonly known as capitalized Democracy. Of course, neither of these methods is selection.

In New Jersey, the county superintendent is selected by the state commissioner of education and appointed by the state board of education. This allocated divisional officer is usually a local resident, but he is the creation of state centralization. Generally, he serves for life; and merits this customary life-tenure.

In Pennsylvania, the county superintendents are chosen by the township directors of schools assembled in convention. This is county centralization, state decentralization.

In Ohio, the county school superintendent is chosen by the presidents of the boards of education of the ranking five townships according to population. This is a perilous device of county centralization, state decentralization, calculated always to favor the urbanization of the smaller districts and to keep the county school superintendent busy manipulating his friends into town board presidencies.

Indiana has a plan similar to that of Pennsylvania, as have also Maryland, North Carolina and Louisiana.

In the three counties of Delaware, the governor appoints the county superintendents.

In Tennessee, the county superintendents are appointed by the judges of the county courts severally.

Before we come to judgment upon this notable variety of experiments, it is profitable to remember that in several states the popularly elected county school superintendents are themselves members of the county boards. In Maryland, where the

county boards appoint the county school superintendents, the boards themselves are appointed by the governor. In North Carolina, the state legislature appoints the county boards, which in turn appoint the county superintendents. To avoid unduly confusing the main issue with a cloud of minor details, we must refrain from citing other such items, for they do not materially alter the application of fundamental principles. It appears that less than half the states of the Union have county boards of education, an item by no means to be ignored by those who trust in part to changes in governmental machinery for betterment of schools.

To box the compass of this situation, it is requisite to observe the systems in such states as do not have county school superintendents or their equivalent. In New England, the general supervision of rural schools is undertaken by superintendents employed by unions of two or more townships. The supervisory unit is much smaller than in the rest of our country. As every one knows, county government is relatively unimportant beyond the Hudson River. The centralization of authority in the hands of the state boards and of the chief state educational officer variously styled in New England superintendent, commissioner and secretary, is proceeding rapidly, and without much regard to local notions.

We must not stray aside into the inviting field of inquiry as to what states have state boards of education and why or not such boards exist or should exist. Comparative tables of the educational hierarchy of the typically different states would indeed be interesting and more or less important. A complete presentation of such matters is the task rather of the bookmaker than of the speaker for a quarter hour.

It is with no passion for uniformity that we proceed now to some statistical details. Our federal system invites and secures progress through local initiative and variety.

A careful review of all the states without great desert areas and with fair railroad facilities shows that the average county contains four hundred square miles, and is about twenty miles square, for surveyors' artificial straight lines have generally been followed rather than the more convenient lines of nature along waterways and by hilltops. This is unfortunate, for most county superintendents find in consequence that there is no true and natural community of interest in the various towns within their legal jurisdiction. In this respect, their task is greatly and unfortunately different from that of the city superintendents of America.

In respect to size, there are great extremes presented even in the older states. For example, Pennsylvania divides 45,215 square miles into 67 counties, an average of 675 square miles per county. For an area of 9,860 square miles of land surface, Maryland has 24 counties, an average of 411 square miles per county. The Georgia county is not quite twice the size of that of Alabama. The Wisconsin county is twice that of Tennessee.

Far greater extremes may be found in population. The average county school superintendent has within his jurisdiction 1,000 families, but the extremes vary from city populations to an average of less than one family per square mile.

We may now properly pause and consider for a moment that a school superintendent exists in a county to attend to matters of four general kinds. He visits schools and tries to help teachers. He cares for financial affairs. He renders opinions upon school legal controversies. And he directs educational policies. Let us dis-

cover what his services are generally conceived to be worth in money.

Omitting such extreme cases as those of Allegheny County, Pennsylvania, and of Cook County, Illinois, we find that the common range of salary is from $4,500 paid in several instances in Pennsylvania and in California to $600, the frequent dole in several states. The lowest recorded payment is that of $115 to a county superintendent in North Carolina. Let us cite a few averages from bottom to top of the scale, namely, Kentucky $831, Colorado $1,061, Michigan $1,192, Indiana $1,391, Texas $1,429, Maryland $1,591, Pennsylvania, $2,322. New Jersey pays uniformly $3,000.

The average salary received this year is $1,100 or so. The brighter spots are New Jersey, Pennsylvania, Illinois, Ohio, California, North Dakota, Maryland and Louisiana in this order.

There is no causal relation between the average salary and the cost of living. In Colorado, houses, provisions, fuel and clothing are all relatively high in terms of money, and low in Illinois. But Illinois pays nearly twice as much as Colorado. The average salary of an Illinois county superintendent will buy three and a half times as much as the average salary of a Colorado superintendent. A similar relation subsists between Louisiana and Kentucky. It would be unfair to infer that Illinois has three or four times as good rural schools as Colorado, or a similar ratio between Louisiana and Kentucky.

Vicinage gives no clue to these differences.

South Dakota pays on the average $1,227, while North Dakota pays $1,656. Maryland pays almost twice as much as Virginia. And California pays far more than does Oregon.

Local custom and convention within the states do not explain salaries, for the extremes vary greatly. Within North Dakota, one county superintendent draws $2,000, and another only $1,000. The Virginia range is from $2,750 to $179. Michigan has a county that pays only $250, and Tennessee one paying only $200. South Dakota scales down to $466 in one case.

The plight of the South Dakota superintendent is perhaps the worst in the Union, since no one can be elected to a third term, consecutively. Most of the county superintendents are women, whom the men elect as cheaper and more amenable than men incumbents.

By way of comparison, we may note that Massachusetts has a minimum salary for union township superintendents of $2,000 and an average of about $2,500.

In order to see the system in operation, let us take the third state in the Union in population, Illinois with 102 counties. One county has 252 rural schools. Another has 26 such schools. The average is 90 schools. Twenty school superintendents have each over 150 schools to visit. The average area of a county is nearly 600 square miles. Under average conditions with an automobile, it is possible to visit four schools a day, spending fifty minutes or so in each school. With a horse, it is possible to visit three schools. Of course, the more the schools, the greater the amount of office work. That county superintendent is fortunate who can spend one half his time visiting schools. And that county is fortunate whose county superintendent gets around to every school three or four times a year. The average county school superintendent has something like six to ten times as much to do as the average city school superintendent. It would be absurd to deny that he does it.

Here and there an accidental genius under favorable conditions, such as prox-

imity to a fine city or to a university or state normal school, makes a success of the county school superintendency. But every one knows that the county school superintendents of America are educationally as a body negligible. The least damaging remark to be made of them is that they are cogs in a machine.

It does not appear that the poorly paid popularly elected school superintendents are educationally inferior to the highly paid ones. Raising salaries is not the solution of the problem of how to get real school supervision. Sending out from the state capitals various lots of men educated in city universities to supervise rural schools would be worse than leaving matters as they are. Reducing salaries might help, since it would increase the number of women school superintendents, who have been teachers. And withdrawing all city-bred men from rural supervision might help, since it would eliminate the men who darken counsel by words without wisdom.

In most states of the Union, educational office is as yet imperfectly differentiated from ordinary political office, and education is looked upon as merely a minor function of government. We still have the theory of "Old Hickory" that any man who can make a fist at supporting himself in private life is quite competent to hold any public office. In wisdom, all education should be differentiated from government and integrated into an independent social institution.

A popularly elected county school superintendent holding office by the partisan favor of a political majority for a fixed term is one person, while a deliberately chosen superintendent holding office by the continuing favor of the representatives of the people for an indefinite term is another person; because their dispositions toward life are opposite. One lives in and by politics and lives insecurely and fearfully, while the other lives in and by education and has at least the chance of living securely and bravely. One has an office, the other a livelihood.

The country needs more and far better rural school supervision. Ohio is moving in this direction. We now have 88 county superintendents and about 500 town school superintendents. What seems to be needed is a local supervisor with from twenty to forty teachers to look after. Over five to ten such local supervisors, there should be a more generalized personal supervision. When this can be secured by appointing one county superintendent, it is well. Otherwise there should be two or even more such superintendents as in several states there now are in several counties. The Virginia and Utah plan of uniting several counties under one man is well only when the local unit of supervision is supplemented by an intermediate unit. In large or in populous counties there should be a board of superintendents and their assistants.

But we have at last reached the cross of difficulty. How shall the highest local supervisory officer be gotten into office? Certainly not by running for it against other candidates upon party tickets at general elections. This served well enough in busy, worried, ignorant pioneer days, but it is anachronistic in our times.

First, no man or woman should be eligible to appointment to the office of county school superintendent who does not hold a superior teachers' certificate granted by a state examining board prior to appointment. In all states, the humbug of the local examining board should cease. Not only the questions shall be set but the answers shall be marked in the state capital.

From the eligible list, the county board of education or the school board members of

the townships should elect the man they desire. But here their power over him should cease, for he should be removable only upon the application of the same authority with trial before the state superintendent, whose findings should be reviewable preferably by a state board of education.

This simple system would end two abuses —one the canvassing of the people or of the directors by applicants who are good travelers and salesmen of their own services, and the other the fear of losing their places and salaries through temporary disfavor for advocacy of something perhaps highly worth while to the school communities.

Third, these county chiefs should be paid by the state and not by their localities. Preferably, they should all have about the same tasks, in numbers of teachers to supervise, distances to travel, money to apportion, fairly equalized by the state officers. Preferably, they should draw salaries based upon seniority and success, but the extremes should not be greatly different. There is no state in the union where the minimum salary should be less than a thousand dollars a year.

We do not fill even our post offices with local men by local choice. The county superintendency is a purely administrative office, and while it should generally be filled by a local man and always by an essentially rural man, it should be filled by such men only with due control from outside, that control in the nature of conflict which invariably is the cause of social progress.

As the philosopher Lotze pointed out more than a half century ago, the mechanism conditions the workings of the spirit. Fortunately, the New Jersey system and the Connecticut experiments, the Massachusetts idea of state certification, the various plans of choice by county boards, all together point the way that the rural schools will travel at various rates in the several states, saving country life to itself and yet raising the standards of rural school teaching according to modern progress.

I know of no reason why the rural schools of the nation should not be better than the city schools. We do not need to send the best men and women for teachers to the country, we have but to develop and to leave them there. The city as the Paradise out of which shall come true education for the country is one of the strangest delusions of mankind. Half a century hence to be a rural teacher will be the ambition of city young women, and to be a rural school superintendent will be the goal of our ablest young men in education, for country life may be large, sane, happy, prosperous and natural beyond any possibilities of life in the great city.

William E. Chancellor
College of Wooster

THE UNIVERSITY OF VIENNA[1]

From 1347–1506, in about twenty places, universities were founded, *i. e.*, in Prague, Vienna, Heidelberg, Cologne, Erfurt, Würzburg, Leipzic, Rostock, Wittenberg and Frankfort a/O.

The University of Vienna was founded in 1365 by Duke Rudolph the Fourth of the Hapsburg dynasty. The University of Prague was the first, and that of Vienna the second founded in the holy Roman Empire of the German nation. They were modeled after the University of Paris, which latter was founded in 1231. As the four nations of the future Vienna University are named the Austrian, Saxon, Rhenish and Hungarian, expressing the idea that the university should be the intellectual center of these

[1] Read before the Educational Department of the Twentieth Century Club, Detroit, Michigan, December 9, 1914.

parts. The university of the middle ages was a state within a state. The founder of the University of Vienna wanted it to be a city within a city. A special wall was destined to separate the space devoted to the pursuit of science in a monastetical quietude. The academic citizenship was a free community with its own jurisdiction. The young creation took the place of the "Domschule," Cathedral School, which had existed at the Cathedral of St. Stephan like at most all other cathedrals since the time of Charlemagne. As a token of its inner connection the document of its foundation was deposited in the St. Stephan's Cathedral and the Probst of the same was made chancellor of the university. The first teachers of the new university came from Paris. Under Emperor Max the First, about A.D. 1500, there were 7,000 students in Vienna. The reformation had a great influence upon the university, dividing it into two parts, a conservative and a progressive one. The fear of the Turks, and plague epidemics which followed each other in short intervals, reduced the students to a very small number. In 1519 only 661 new students immatriculated; in 1532 only 12.

It is needless to state that all branches which form a part of a university of the first class are adequately represented in Vienna.

Charles Thomas Thwing in his book "Universities of the World" says that one of the principal contributions made by the University of Vienna to the cause of liberal learning lies in the field of Romance language and literature, and that a more significant achievement of the philosophical faculty lies in the field of political economy, also that the University of Vienna has made to the world a most worthy contribution in a fundamental theme of political economy. He claims that the medical department of the university is held in higher regard than the philosophical.

Billroth in his book "Teaching and Learning of the Medical Sciences at the Universities of the German Nation and some general remarks concerning Universities" says:

> Most universities founded in the fourteenth and fifteenth centuries were corporations with special privileges. The state government did not concern itself about the inner administration of the universities, even if it gave annual contributions to the same and reserved the right to pass, ultimately, on the appointments. In the course of the sixteenth century the state governments began to influence more and more the inner administrations and some universities, *e. g.*, Vienna, became state institutions. When the reformation became a fact the universities in the various parts of Germany were obliged to take a decided stand concerning the church. They had to take refuge either in the church or in the state. In 1546 a professor could not be appointed, if he had not passed an examination before the theological faculty which proved that he was a good Catholic. In 1554 the newly appointed professor had only to declare that he was a good Catholic. In 1556 the Old Catholic Hungarian Nobility effectuated the permission that its youth could also study in Vienna. A few years later a protestant could become dean and even a rector. In 1551 the Jesuits established themselves in Vienna and obtained permission to fill two professorships in the theological faculty. They became more influential. In 1574 they obtained five chairs and in 1622 the whole theological and art faculty. Then they had control of the whole university. Already in 1581, teachers and pupils had to swear to the Catholic confession. These are the reasons why in Vienna the natural sciences, medicine and law, at this time, descended to a level of a meager mechanical bread study. They were, however, not directly subjected to a pressure by the church. In other universities these sciences developed mightily, especially at the protestant universities in north Germany, Holland and England. The whole university, in as much as it was not in the hands of the Jesuits, sank to the lowest level; the medical faculty scarcely existed. Then the great Empress Maria Theresa called Gerhard van Swieten from Holland to Vienna in 1745, because there was nobody in Austria who could help the state in this calamity.

The support which Maria Theresa gave to van Swieten enabled him to carry out his plans with determination regardless of objections. To van Swieten the medical school of Vienna is indebted for its world reputation. This world reputation has substantially contributed to let the university again appear in the glory in which it existed in the first centuries of its existence and is greatly responsible for the fact that Austria again became a cultural factor and an intellectual great power.

At the end of the eighteenth century the state took a firm hand in the administration of the university. It took these institutions more or less out of the hands of the church and at the same time saved them from a total ruin. The corporation had become antiquated and powerless because they clung rigidly to their old ideas.

Billroth complains that the state has gone a little too far and that the universities like to see a part of the self-government restored to them. Gerhard van Swieten founded a botanical garden, a chemical laboratory, improved the instruction in anatomy and opened the first clinic. The Vienna Clinic was the first stationary clinic on German soil. The first clinical instruction in Vienna dates from 1753.

The Vienna physician Plenciz defended the view that diseases are caused by lower organisms more than a century before this doctrine was recognized by science. It may be mentioned that the method of percussion was discovered by the Viennese Auenbrugger in 1761. It is one of the most important discoveries made in medicine and is especially important in diseases of the chest.[2]

Karl Rokitansky used the large material of the Allegemeine Krankenhaus (General Hospital) in order to investigate the relation between the symptoms of a disease and the anatomical changes of the organ. He found that the groups of symptoms always corresponded to certain anatomical differences from the normal. He replaced the symptomatic pictures of diseases by the anatomic. This marks a new era in medicine.

Rokitansky may be regarded as one of the founders of anatomical pathology, *i. e.*, he tried to associate the various steps of diseases with the anatomical changes in the body. During his term of office over 100,000 autopsies were reported. Joseph Skoda worked out the method of auscultation and percussion. Ferdinand Hebra caused great advances in dermatology based on pathological anatomy.

Hyrtl, the anatomist, was famous for the manner with which he created enthusiasm among the pupils, teaching the apparently sober subject of anatomy. Zuckerkandl taught topographical anatomy.

Theodore Meynert investigated the finer structure of the brain. Billroth, the famous surgeon, was a member of the faculty at the end of the last century. Nothnagel was a famous clinician. Turck, the laryngologist, became renowned by using the laryngeal mirror. Politzer and Gruber created the ear clinic of the university. E. v. Bruecke was a great pioneer of modern physiology.

In the obstetrical clinic, Semmelweiss (1847) reduced the mortality from 18 per cent. to 2.45 per cent. by obliging the students to sterilize their hands. He was celebrated in 1894 as forerunner of Lister, after he had died in 1865 embittered and with a shattered mind because his efforts were not appreciated and accepted.

Forensic medicine under E. Hofman reached a high level. The first chair for this branch of medicine was established in Vienna.[3]

These are only a few of the many who created and maintained the fame of the medical department of the University of Vienna and whose labors have benefited the whole world.

According to Minerva, Vienna lately had

[2] These and the following items are taken from the history of the University of Vienna by the Academic Senate.

[3] Flexner, Carnegie Foundation report.

7,672 ordinary, 1,112 extraordinary students and about 420 professors.

In 1897 women were admitted as regular students to the lectures of the philosophical faculty. If they possess a medical degree obtained in a foreign country they can be admitted to those additional examinations which make the recognition of such a diploma possible.

A. Flexner in his book, "Medical Education in Europe, a Report to the Carnegie Foundation for the Advancement of Teaching, 1912," says:

> The most recent statistics for Austria show 80 registered women physicians, as compared with 9 in 1905, 34 in 1908; 39 of the 80 are settled in Vienna. The proportion of students who subsequently engage in practise is, as far as Swiss experience goes, apparently not large.
>
> For these small numbers no special provision is anywhere made, excepting in Berlin, where women students possess a dissecting-room of their own. Elsewhere, men and women attend the same classes and demonstrations, and, as at Vienna and Paris, dissect at the same tables. Coeducation is the general practise on the Continent. Three hundred women mingle on even terms with three thousand men students in the hospitals of Paris; in Rome, Geneva, Brussels, Upsala, Copenhagen and the Swiss universities, no distinction is made between the sexes.
>
> There exist abundant university extension lectures which were inaugurated in 1895.

Thwing quotes the late Dr. Henry Ingersoll Bowditch, of Boston, who said in 1859 after his return to Vienna, where he followed medical studies:

> I have grown a foot taller. I have learned much, not, perhaps in particular facts as in more enlightened general views of some points about which I knew little or nothing before. It has brought me in contact with men, and I have memories of noble minds and kind hearts where before I had merely scientific abstract notions of certain medical writers, so that I shall never regret my visit to this place.

Thwing claims that Vienna is great in its department of physical diagnosis and pathology. I may, perhaps, add that Vienna takes a unique position in reference to postgraduate work, especially for Americans. We may almost say that Vienna has been, and perhaps will be for a while, one of the most frequented American postgraduate schools. This sounds somewhat strange, yet any American who has taken postgraduate work in Vienna will bear out this statement. Not only are many courses given in English, but many courses are directly arranged by a given number of Americans. Besides, one can obtain private instruction in a given branch of medicine from a teacher especially qualified for such work. A great deal of time is saved in this manner. So far as I know, it is nowhere made so easy to procure exactly what one wishes or needs as it is in Vienna.

Thwing claims that in Austria the University of Vienna stands essentially alone. The other six universities—Graz, Innsbruck, Cracow, Lemberg, Prague and Czernovitz—have students hardly more than equal to Vienna.

Until about 1890 larger numbers of Hungarians followed their studies in Vienna. Since then Hungary pursued measures to keep her students in her own country. In the "History of the Vienna University" by the Academic Senate of the University of Vienna, 1898, we read:

> The state furnishes the university the means, the university in turn educates the officials, teachers and physicians for the state. The standard of education and ability of the latter determines the well-being, the dignity and the power of the community. The university furnishes a higher education for the clergy which meets the religious and moral demands of the population. The more circumspect the work of the university becomes in all its parts, the larger the number of people becomes who seek inspiration, instruction and broadening of the horizon, the higher the level of culture of the state will be.

University education, Thwing says, is not a primary interest of the Austrian na-

tion as it is of the German, and the educational renaissance has not yet dawned in southeast Europe. Medical students represent less than a quarter of the whole number, but no less than 3,000 students of law are here studying to become practitioners in Austria and Hungary, far above the demand, but the study of law is considered an excellent professional school for other callings than law.

The reason that university education is not a primary interest of the Austrian nation, as told by Thwing, may be explained by the economical condition of the country. Austria does not seem to be as rich as some other countries. It appears to me that the prosperity of a country can be judged by the possibilities for higher education. There exists little doubt that the desire for knowledge is generally prevalent, but the spiritual hunger can not be satisfied so long as the great majority of people have to bend all their efforts and use all their energy toward the procuring of a livelihood in their fight for bare existence. Only exceptionally strong individuals are able to save so much of their energy that they can combine the two, and, then, we have once in a while a so-called genius. The very great majority has no energy left after a day's work. An ideal state of affairs would exist if anybody who has the ability and the desire could receive a higher education. This would express a satisfactory condition of culture and civilization. It is quite possible that at some future time this can be accomplished. At present, we must be satisfied with efforts aiming at that end. There may come a time when the rude conception of the world will disappear, when the great majority of people will do their own thinking and be only called upon to fight conditions of nature inimical to their health and happiness.

EMIL AMBERG

EDUCATIONAL EVENTS

EDUCATIONAL LEGISLATION

AMONG bills of educational interest reported by the Bureau of Education are the following:

UNITED STATES CONGRESS

Enacted into law:

H. R. 13,222.—Permitting the use of public-school buildings and grounds in the District of Columbia for supplementary educational purposes, civic meetings for the discussion of public questions, social centers, centers of recreation, and of public-school playgrounds during the school year and during vacation, under such regulations as may be prescribed by the board of education.

COLORADO

Passed senate:

S. B. 72.—Providing for the interchange of teachers between Colorado districts and others outside the state.

KANSAS

Passed both houses:

S. B. 432.—Providing for the observance of Frances Willard Day in the public schools.

H. B. 291.—Providing for county normal institutes at the county superintendent's option.

H. B. 292.—Providing for holding school-board conventions by county superintendents.

H. B. 335.—Revising certificate law.

H. B. 989.—Appropriating $25,000 to aid weak districts.

MASSACHUSETTS

Bill introduced:

H. B. 666.—Providing for amendments relating to the distribution of the Massachusetts school fund, to the effect that a town, in order to share in the income of the Massachusetts school fund, shall expend for the support of public schools, out of the proceeds of local taxation, an amount equal to that accruing from a tax of $4 on each thousand dollars of valuation.

NEW MEXICO

Enacted into law:

S. B. 75.—Providing for an additional state tax of one half of one mill, the proceeds to be added to the current school fund. One half of the current school fund is to be known as the "reserve fund," to be used in maintaining seven-month terms in such districts as are not able to support a term of seven months from the income from the state funds, the local school tax of 15 mills, and

the district's apportionment from the county general school fund. The county school fund shall consist of the proceeds of a school tax on all property of three mills on the dollar.

OREGON

Enacted into law:

S. B. 83.—Providing for the free use of public schoolhouses as civic centers.

S. B. 137.—Preventing discrimination in payment of salaries to male and female teachers.

WEST VIRGINIA

Enacted into law:

H. B. 53.—Authorizing the establishment of teacher-training departments in high schools. Courses of study for these departments and other regulations concerning them must be prescribed by the state board of education. As many as 10 high schools maintaining these departments may receive a special subsidy of $400; but this special subsidy may not be granted to any high school located in a county in which there is a state normal school or other state school offering similar courses of study for the training of teachers.

S. B. 54.—This act is known as the "Library Law." It gives the authority to cities, towns and school districts to call an election to decide for or against a public library or reading room. If the majority favor the library, the proper authorities may make a levy not to exceed one and one half cents to support such a library.

S. B. 78.—Requiring boards of education in districts not supporting or aiding in the support of a high school to pay the tuition fees of such pupils in their districts as have completed the elementary course of study and desire to attend a high school or other school of high-school grade in another district within the state.

S. B. 129.—This act creating a state board of health and outlining its powers and duties has a very direct bearing upon sanitary conditions in the schools. This department will formulate and enforce rigid regulations regarding the ventilation, heating and lighting in schools and the construction and condition of outhouses. The law says: "The department of health shall make rules and regulations regulating the ventilation, warming, natural lighting, and excreta disposal in public halls, churches, schoolhouses and public institutions." From time to time teachers and boards of education will receive full instructions about their duties regarding public sanitation.

H. B. 158.—Giving boards larger powers in consolidating schools, building graded schools and transporting pupils. No school shall be maintained after July 1, 1915, for fewer than 10 pupils, but boards may employ such means as may seem wise to provide educational advantages to children living over two miles from nearest school, using the per capita share of all school funds of the district for this purpose.

H. B. 159.—Revising, adding to, and reenacting the sections relating to the issuing of teachers' certificates.

H. B. 401.—Raising maximum rates of district school levies from 12½ cents and 25 cents on the one hundred dollars for building and teachers' funds to 15 cents and 30 cents respectively; reenacting the levy clause which allows districts having an incorporated town or city, maintaining schools for longer term than six months, to levy such amount as is necessary for all purposes; and providing that any district which has exhausted all sources of revenue, including the supplementary aid, and which still has need of funds to employ a sufficient number of teachers at the minimum salaries to teach all the schools for the minimum term of six months, may lay an additional levy for the teachers' fund, not to exceed five cents on the one hundred dollars valuation.

THE UNIVERSITY OF NORTH DAKOTA AND THE LEGISLATURE OF 1915

THE legislature of North Dakota adjourned on March 5. During the session there were enacted three important laws which affected the university of the state. The first of these was an act creating a State Board of Regents and placing under its direction the educational institutions of the state. The board consists of five members who hold office for a period of six years. The second act related to the establishment of a budget law, requiring the formulation of a statement of proposed and necessary expenditures before the meeting of the legislature. In consequence, the legislature of this year passed for the first time a complete budget act, controlling all appropriations relating to the state government. The third act was a modification of the mill tax law. The mill tax principle had been vitiated by the addition to the educational mill tax of many other miscellaneous taxes, such as that for the wolf bounty, for glandered horses, for the extinguishment of durine, etc. The result was

that these miscellaneous mill taxes prevented the necessary increase in the total assessment of the state, and in order to clear the way for a higher assessment the mill taxes were repealed for the time being. In lieu of them, however, the legislature passed a continuous annual appropriation for the state educational institutions, giving them the amount which they would have received from the mill tax this year.

The session started in with a good deal of criticism of educational matters, and an investigation of financial conditions was made, with the result of a clearer idea of the functions of educational institutions and a wider knowledge of the expenditures they were really making. The University of North Dakota will have in the next biennial period $600,000 for the current expenditures of the two years. While no allowances were made for buildings, in view of the financial condition in the state, appropriations were made for the conduct of the stations at Devils Lake and Hebron and for the work of the Biological Survey in addition to the sum mentioned above. The new State Board of Regents comes into control of the educational institutions of the state on July 1 of this year.

It is interesting to note that the State University of North Dakota has had a history of thirty-two years, and in that time has reached a point where it has a library aggregating 54,000 volumes, a student body in all departments and the summer session of 1241, and a faculty of eighty-four, with fourteen buildings in addition to the three buildings of the affiliated Wesley College. The university has six colleges, *i. e.*, liberal arts, education, law, medicine, engineering and a school of mines.

CONDITIONS AT THE UNIVERSITY OF UTAH

It became known recently that Dr. J. T. Kingsbury, president of the University of Utah, had recommended that Professor George M. Marshall, head of the department of English, should be superseded in charge of the department by Professor O. J. P. Widtsoe, that two instructors in the department should be dropped, and that Associate Professor Ansel A. Knowlton, physics, and Assistant Professor G. C. Wise, modern languages, should not be reappointed. There was objection to this action on the part of faculty, alumni, students and citizens, but at the meeting of the regents on March 17, the president was sustained and reelected for a term of two years. It is said that two of the twelve regents present voted against the reelection of President Kingsbury and that four voted against the statement that was made public. After the meeting of the regents fourteen members of the faculty presented their resignations, including: Byron Cummings, dean of the school of arts and sciences, and professor of ancient languages and literature; Frank E. Holman, dean of the law school and professor of law; William C. Roylance, professor of history; Charles Taylor Vorhies, professor of zoology and botany; Joseph Peterson, professor of psychology; Ralph L. Byrnes, professor of bacteriology and pathology, and Henry A. Mattill, professor of physiology and physiological chemistry.

There follow extracts from the statement of the board of regents and copies of several of the letters of resignation.

Extracts from the statement of the regents:

The by-laws of the board of regents make it one of the duties of the president to nominate the professors and instructors who constitute the faculty. When such nominations are before the board, they, after such inquiry, discussion and consideration as they deem necessary, then confirm or reject the president's nominations by a regular vote. The president nominates members of the faculty and the board of regents appoints them and makes the final selection. The ultimate responsibility is always upon the board of regents, and their action is not merely formal and perfunctory. The board once refused to confirm the nominations of the president, with the logical result that the president resigned and the faculty remained. The by-law referred to has been in force for many years, and the wisdom of it has never been questioned. It is obvious that, by virtue of his training and position, the president is better able to investigate the qualifications of proposed professors and instructors than is the board. This is a detail of administration, and the president is employed to attend to this and other details by the board, who necessarily devote only a portion of their time to the affairs of the university.

The result of this is that the board of regents looks to the president of the university for results. He is expected to conduct the university in such a way as to bring the best results to the state for the money expended. It is obvious that if the president is to attain results he should not have in his faculty members who are not in sympathy with his administration and with the university. Otherwise there will be undue friction and the work of the unversity will be hampered. Certainly it would be most unwise to retain a president and then expect him to conduct the university successfully with faculty members who are antagonistic either to him or to the university or to both. The board of regents has decided to retain Dr. Kingsbury as the president of the university for the academic year 1915–16. The president has made his nominations of professors and instructors for the ensuing year and the nominations have this day been confirmed. Dr. A. A. Knowlton, Associate Professor George C. Wise and Instructors Charles W. Snow and Phil C. Bing were not renominated. . . .

The university enters into contracts with its professors and instructors for one year at a time. When these contracts expire the professors and instructors are at liberty to decline further employment with the university. The board has the same right to decline again to employ them. Professors and instructors look after their best interests from their own viewpoint. The university does the same. Not infrequently professors decline further employment and leave the university because they can obtain better positions or more remuneration elsewhere. The board considers that both parties have equal rights as to freedom of contract.

It is argued to the board that professors and instructors should have the right of free thought, free speech and free action. This can not be and is not questioned. The board, however, has the same rights. These privileges are reciprocal. When the rights of the two clash then it is for the board to determine which is right and which course serves, or is inimical to, the best interests of the university. Some one must have the right and responsibility to decide such matters, and the law has vested it in the board.

Professor Wise, for instance, has seen fit to belittle the university and to speak in an uncomplimentary way about the administration. That is his privilege. It is also the right and privilege of the president and board to say that his course is wrong and to refuse longer to employ him. Professor Wise may then go to another institution and state, where his views and those of the governing board may coincide, if there is any place where an employee is permitted to belittle the institution that employs him and to criticize its management unjustly.

What has just been said applies also to Dr. Knowlton, who has seen fit to speak very disrespectfully, if not insultingly, of the chairman of the board of regents. From his standpoint this doubtless means that he has exercised his inalienable rights of free thought, free speech and free action. But the president and the board also have an equal right to free thought, free speech and free action, with the result that the president and board do not agree with Dr. Knowlton's sentiments; he may hereafter find an institution and state where similar sentiments against the presiding officer of the governing board may be approved. If so, that is where he belongs.

The services of Messrs. Snow and Bing are no longer required in the university, because a change made in the work of the English department makes it possible to reduce the number of instructors.

University professors and instructors receive their compensation from revenues obtained from the whole state of Utah; a certain respect is therefore due the state, its people and officers, and this board will not allow professors and instructors to pursue a course in this regard which the board thinks is detrimental to the best interests of the university, nor to remain even if nominated or renominated, when the breach between them and the administrative head becomes irreparable. At the same time, the president and board concede to professors and instructors the perfect right and freedom to make healthy and judicious criticism of the board of regents, the president, the faculty, the university, and everything connected with or related to its management; and the president and board retain the same right and freedom to think and act within their respective spheres.

Letters of Resignation:

Inasmuch as you deem it necessary to make sweeping changes in the work and teaching force of the school of arts and sciences, and seem to consider it unnecessary to advise with me in any way regarding these changes, and inasmuch as your reticent attitude toward me in your recent interview both indicate that you no longer have confidence in my ability and judgment, and inasmuch as I am not in harmony with the forces and policy now guiding the university, I would respectfully tender my resignation as dean of the school

of arts and sciences and professor of ancient languages and literature, to take effect with the termination of my contract at the close of the present school year.

Byron Cummings

Inasmuch as I am not in harmony with a policy of repression, suspicion and opportunism in university administration, but believe that personal and academic freedom and a frank, forward looking policy is a richer endowment than larger appropriations and the good will of outside interests —whether religious, political or financial, I hereby tender you my resignation as dean of the law school and lecturer in "Contracts," "Torts" and "Property"—said resignation to take effect at the expiration of the present school year.

Frank E. Holman

As I find myself out of harmony with the administration with regard to the matters below indicated, I herewith tender you my resignation as professor of history and political science, the same to take effect upon the expiration of my present contract with the university.

I am unable to bring myself to agreement with the administration upon the following matters:

The removal of Professors Wise and Knowlton, for causes which appear, from the statement of the board of regents, wholly inadequate.

Second.—The removal from the headship of the department of English of Professor George M. Marshall, after more than twenty years of service wholly acceptable to the administration, so far as his colleagues could see, for no given cause whatsoever.

Third.—The discontinuance, as a part of a recent change in the administration's policy, of Professor F. W. Reynolds' connection with the president's office, especially as so much of my work, in various connections, was done with or through him, apparently with your entire approval.

Fourth.—I feel that that part of my work which I have come to regard as of the greatest value, viz.: the community work in civics, to be successful should have not only your passive but also your active and sympathetic approval and cooperation. This, I am compelled to believe, it has not at present.

Fifth.—As of late years you have not taken me into your confidence with regard to university policies, in some cases even as affecting my own department, you leave me open to suspicion of disloyalty whenever such general accusations of disloyalty and conspiracy as those recently made are published.

I do not wish to intimate that the administration has not the rightful power to make removals from the faculty without the approval of the remaining members, but that the removals in this instance indicate a policy that is a menace to academic freedom, and a condition under which I feel that I can not work and retain my self respect.

President Kingsbury, I am indeed very sorry that I can not continue my service with the university. For ten years past I have looked to a development of a service to the state, through the university and through my department in particular, which I am sure would have proved of incalculable benefit to the people of Utah, and would have gone far towards placing the university in better relations to them. But as the great purpose of that work was the securing of united effort in the communities of the state for their own development, obviously such work can not be effectively done by an institution itself torn by internal discord.

W. G. Roylance

The events of the past few weeks, culminating in the action of the board of regents in its meeting of last evening, have been such as I can not acquiesce in. I have never felt very secure in my position in this institution, because of a lack of any official assurance concerning the tenure of office. I now feel no security whatever—indeed, quite the reverse.

Some time since I indicated my desire to be relieved of my then duties as dean of the medical school. I withdrew because I was not in harmony with the policy of repression exercised by the administration, both as to matters to which I felt entitled to information from the administration and as to matters which I felt should be presented to the regents.

Inasmuch as I firmly believe that the University of Utah can never come to a full realization of those principles for which a free university should stand under the present policy of administration, and inasmuch as I am, therefore, completely out of harmony with its present ideals, I hereby tender my resignation as professor of zoology and botany, to take effect at the expiration of my present contracts.

Charles T. Vorhies

From your statement to me just before the special faculty meeting of March 9, I have been led to expect for my colleagues a fair hearing and a public statement of the facts for which they are

being dropped. In the public statement now made by the board, it appears that your opinion of the attitude of these men is the basis of their dismissal. In the case of Professor Knowlton, I have very good evidence against any antagonism by him to the administration, and to you personally. I gave you on two occasions this evidence. Possibly you are as wrong in your judgment of some other cases as I think you are in this one. I have stood only for fair play, and my stand has been based on my desire for the good of the university.

Now, if the action of the board made public is final, I am compelled to offer you my resignation as professor of psychology in the University of Utah; this is to take effect at the expiration of my present contract with the university.

JOSEPH PETERSON

Conditions having arisen at the University of Utah which make tenure of office questionable, thereby automatically curtailing the best efforts of the instructional body, I deem it necessary to sever relations with the department now in my charge.

I hereby tender my resignation as professor of bacteriology and pathology, and as state bacteriologist and pathologist, to become effective at the close of the school year 1914–15.

R. L. BYRNES

Whereas the recent arbitrary dismissal and demotion of certain members of the faculty has led to a feeling of uncertainty which is not conducive either to drawing the best available men to this university or to encouraging and obtaining the best work from the faculty, and

Whereas the administration has consistently failed and refused to recognize the voice of the faculty in matters of policy affecting the university, and this failure and refusal have precluded any feeling of confidence or cooperation on the part of the faculty,

Therefore, being fully convinced that I can not continue to do my best work under existing conditions and being unwilling to appear to indorse the present policy by remaining a member of the faculty, I hereby tender my resignation as professor of physiology and physiological chemistry, to take effect at the close of the academic year.

H. A. MATTILL

EDUCATIONAL NOTES AND NEWS

PRESIDENT A. ROSS HILL, of the University of Missouri, will give the commencement address at the University of Minnesota on June 10.

DIRECTOR CHARLES HUBBARD JUDD, of the School of Education at the University of Chicago, has accepted an invitation to speak before the Northeastern Iowa Teachers' Association which will meet in Clinton, Iowa, from April 1 to 3. Dr. Judd will also be a speaker before the Inland Empire Teachers' Association at its meeting in Spokane, Washington, from April 14 to 16.

PROFESSOR RAFAEL ALTAMIRI CREYEA, of the university at Oviedo, Spain, and director of primary education, has accepted the invitation of the American Historical Association to attend the historical congress to be held at San Francisco this summer.

PRESIDENT FRANK J. GOODNOW, of the Johns Hopkins University, addressed the Schoolmasters' Association of New York and vicinity on March 19 on "Chinese Education."

ON March 2, 3, 4 and 5, President G. Stanley Hall, of Clark University, delivered at De Pauw University the lectures on the Guy Morrison Walker Foundation on the subject of "Comparative Religions."

SECRETARY D. F. HOUSTON, of the United States Department of Agriculture, will take part in the exercises commemorating Founder's Day at the University of Virginia on April 13, formally presenting to the university the statue of Thomas Jefferson, which was done in bronze by Carl Bitter, and for which the university is indebted to Mr. Charles R. Crane, of Chicago. The statue will occupy a commanding site on the lawn, facing Monticello, and directly opposite the statue of Washington, which was recently presented to the university by Mr. John T. Lupton.

THE Universities of North Carolina, South Carolina and Virginia, and Vanderbilt University have entered into an agreement by which each institution is to appoint yearly an exchange professor to give a series of lectures in one of the other universities. In February Dr. Francis P. Venable, exchange lecturer from the University of North Carolina, gave four lectures on "Radium and Radioactiv-

ity" at the University of South Carolina and one lecture on the subject "Responsibility of a University for Research." President W. S. Currell, of the University of South Carolina, during the first week in March, lectured as exchange professor at Vanderbilt University. The subject of his series of lectures was Modern Drama. On convocation day he spoke on "Marginal Lives."

DR. W. V. BINGHAM has resigned his position of assistant professor of psychology and education at Dartmouth College to accept a professorship in the Carnegie Institute of Technology at Pittsburgh. Professor Bingham came to Dartmouth five years ago from Columbia, where he was instructor in educational psychology in the Teachers' College. For the past three years he has been the director of the summer session, and he will continue as such for the coming summer.

THE Rev. Brother Anthony, president emeritus of Manhattan College, died on March 14, in his seventy-fifth year. He was born in Rochester, N. Y., his family name being William W. Brynes, and entered the Order of the Christian Brothers in 1858. Brother Anthony spent the first twelve years of his teaching career in the brothers' schools in Montreal and Quebec. He was transferred to Manhattan College in 1870, as professor of English, and five years later was appointed president of the college.

A VOCATIONAL conference was held at Vassar College from March 12 to 14. The speakers and their subjects were as follows: Talcott Williams, head of the Columbia School of Journalism, "Journalism"; Arthur Dean, of the Department of Education of New York state, "Teaching"; W. Franklyn Paris, secretary of the Art Alliance League, "Interior Decorating"; Homer Folks, secretary of the State Charities Aid Association, "Work with Dependent Children"; Rev. Charles S. Tator, of the Russell Sage Foundation, "Opportunities for Social Work in Rural Communities"; Dr. Adrian Taylor, of China, "Foreign Missionary Work"; Miss Anna B. Taft, of the Presbyterian Board, "Church Work"; Miss Mary E. Scott, "Y. W. C. A. Work."

DR. A. R. BRUBACHER will be installed as president of the New York State College for Teachers, at Albany, on April 16 and 17. On April 16, at 8 P.M., addresses will be made by Professor Carleton L. Brownson, dean of the faculty, the College of the City of New York; Professor Henry A. Suzzallo, professor of the philosophy of education, Teachers College, Columbia University, and Professor George P. Bristol, professor of Greek, Cornell University. Following the addresses there will be a reception to President Brubacher and Mrs. Brubacher by the regents, trustees and faculty. On April 17, at 10:30 A.M., addresses will be made by Governor Charles S. Whitman and President Arthur T. Hadley, Yale University, and President A. R. Brubacher will make an inaugural address. Greetings will be presented by Charles P. Steinmetz, Ph.D., Schenectady; Alfred C. Thompson, principal Brockport State Normal School, president of the State Teachers Association; W. F. H. Breeze, president of New York State College, for Teachers Alumni Association, and Dr. Leonard A. Richardson, of the faculty of the New York State College for Teachers. On the afternoon of April 17, at the close of the ceremonies, Dr. and Mrs. Brubacher will give a luncheon and reception to the invited guests.

SEVERAL important appointments and promotions were made at the March meeting of the Yale corporation. Professor John Zeleny, of the University of Minnesota, will next fall succeed Professor Hastings in the department of physics in the scientific school. Professor Josiah Morris Slemons, at present professor of obstetrics and gynecology at the University of California, will take the work in the medical school of the late Professor Ramsay. Assistant Professor Hiram Bingham has been promoted to a full professorship of Latin American history in the graduate school. The following new assistant professors were appointed: In the college: Charles Seymour, at present instructor in history, was made assistant professor of history; Thomas Smith Taylor, at present an instructor in physics, was made assistant professor of physics. Sheffield Scientific School: Richard S. Kirby, C.E., assistant

professor of mechanical drawing and descriptive geometry. He is at present a professor at Gettysburg College in Pennsylvania. Medical School: Arthur Fenwick Holding, assistant professor of radiography. He is at present connected with the Cornell University medical school.

AT the last quarterly meeting of the trustees of Dartmouth College it was voted that teachers from New Hampshire public schools will receive free tuition in the Dartmouth Summer School. The trustees also announced the appointment of Dr. Philip Greeley Clapp as director of music. Dr. Clapp was graduated from Harvard in 1908 and received his doctor's degree in 1911, after which he studied composition and conducting in Stuttgart with Max Schillings. Further appointments announced by the trustees were: Walter Leslie Mendenhall, formerly professor of physiology and pharmacology in the medical department at Drake University, who comes to Dartmouth on April 1 as assistant professor of pharmacology; Edward C. Mabie (Dartmouth, '15), instructor in public speaking, and Courtney Bruerton, instructor in French.

AT the last meeting of the board of trustees of Wellesley College promotions were voted as follows: Katharine M. Edwards, from associate professor to full professor of Greek and comparative philology; Helen A. Merrill, from associate professor to full professor of mathematics; Alice Walton, from associate professor to full professor of Latin and archeology; Amy Kelly, from instructor to associate professor of English language and composition; Nellie Fosdick, from curator of botany laboratories to instructor in botany; Ada M. Bancroft, from laboratory assistant to curator of botany laboratories; Marion E. Markley, from assistant to instructor in English literature; Alice Tisseau, from assistant to instructor in French; Mathilde B. Damazy, from assistant to instructor in French; Gertrude B. Manchester, from assistant to instructor in hygiene; Frances B. Plummer, from assistant to recorder of the department of hygiene; Ivy Campbell, from lecturer and assistant in psychology to instructor in psychology.

THE faculty of Lehigh University, at the March meeting, made an important change in the requirements for admission to the engineering courses. Beginning next September, advanced algebra will not be required for admission but may be presented by candidates for elective credit toward the fourteen units necessary for admission. Instruction in advanced algebra will be given engineering students in the freshman year hereafter.

REPORTS of fraternity averages at the University of Illinois, for the first semester of the present school year, show that of the twenty-seven national fraternities, Beta Theta Pi holds the highest average, 83.56, while Kappa Alpha Nu is at the bottom of the list with an average of 74.81. Of the eight local fraternities, Iris stands highest with a grade of 84.66, Delta Omega at the bottom with 79.98. Of the five professional fraternities, Alpha Chi Sigma has the highest, 87.38, and Phi Alpha Delta the lowest of this group, 80.53.

THE *Journal* of the American Medical Association reports that the standard of the medical matriculation of the Manitoba Medical College has been raised. Beginning with the session of 1915–1916 all students must have standing equivalent to the first year in the science course in the University of Manitoba. The total number of students enrolled in the present session number 176, the freshmen class being forty, including four women. Owing to the war having called away several of the teaching staff, the following appointments have been necessitated: Lecturer in Roentgen rays and electrotherapeutics, Dr. Walter L. Watt; Dr. Boyd, professor of pathology; Dr. Robert D. Fletcher, lecturer in genito-urinary diseases; Dr. Hugh Mackay, lecturer in dermatology; Dr. T. Herbert Bell, lecturer in clinical ophthalmology; Dr. George W. Fletcher, lecturer in clinical otology and laryngology; Dr. Daniel S. MacKay, lecturer in clinical gynecology; Dr. John D. McQueen, lecturer in materia medica and pharmacy; Dr. Alvin T. Mathers, lecturer on contagious diseases; Dr. James A. Gorrell, demonstrator in anatomy. Dr. John O. Todd has been appointed lecturer in theoretical surgery in place of Dr. B. J.

Brandson, resigned; Dr. Ernest S. Moorhead has been appointed lecturer in theoretical medicine in place of Dr. William Chestnut, resigned.

THE trustees of Smith College have made the following promotions: From assistant professor to associate professor: Inez W. Wilder of the department of zoology; Mary B. McElwain of the department of Latin; F. Stewart Chapin of the department of economics and sociology. From instructor to assistant professor: Mary M. Hopkins of the department of astronomy; Grace N. Dolson of the department of philosophy; Esther Lowenthal of the department of economics and sociology. From assistant to instructor: Lucy L. Barrangon of the department of art; Florence K. Root of the department of Latin. The following sabbatical leaves of absence have been granted: Mary A. Scott of the department of English, for the second semester; George C. Vieh of the department of music, for the second semester; Laura A. Bliss of the department of music, for the first semester; Charles F. Emerick of the department of economics and sociology, for both semesters.

A COURSE of lectures in agricultural journalism is given this term at Cornell University by Mr. Bristow Adams, who is in charge of the information service of the College of Agriculture. Forty-one students attended the first lecture, which indicates interest, since the lectures take place at eight o'clock in the morning and no credit is given. The purpose of the course is not so much to train journalists as to help students in the agricultural college to think straight and to write clearly. Practise will be given in the writing of new stories, and the lecturer will tell how newspaper work is done. Attention will be given to the subject of agricultural journalism for the especial benefit of students who expect to be engaged in farm bureau work and for those who may make agricultural journalism their profession.

ACTING upon a plan suggested by a special committee of the faculty, work will continue all the year at the Massachusetts Agricultural College, if the plan is adopted by the trustees. Up to the present time the college has been in session nine months in the year and has had three months vacation in the summer. There has recently been considerable argument as to whether such a system is good for any college, and for an agricultural institution it seems disadvantageous to close every spring just when all agricultural activities are at their best, and to remain closed during the most significant months of the year. The Massachusetts Agricultural College now proposes to keep its agricultural and horticultural departments in operation through the summer.

A "UNIVERSITIES Committee on the State Constitution" has been appointed by the presidents of the University of Chicago, the University of Illinois and Northwestern University to consider some of the topics in regard to which constitutional changes in Illinois are being currently advocated. This committee has enlarged its membership to twenty-five, and now includes not only representatives from the faculties of the three universities but also a number of other persons prominent in civic affairs in the state who have devoted special attention to various topics of proposed constitutional change. Upon most of the topics considered by the committee preliminary reports have already been made, and it is proposed to publish the completed reports and material collected by the committee in a form that may be conveniently used either by members of a constitutional convention, by legislative committees, or by organizations and individuals interested in the various topics treated. It is believed that the work of the committee may also be found useful in the consideration of similar problems in other states.

PROFESSOR EDWIN OAKES JORDAN, chairman of the department of hygiene and bacteriology in the University of Chicago, has been giving a series of illustrated scientific lectures in the reading-rooms of the Sante Fe railroad system for the benefit particularly of the employees of that system. The subject of his lectures has been "Germs as Friends and Foes."

THE committee on general administration of the trustees of Cornell University has ap-

proved the action of the university faculty in voting to revert to the practise of requiring two years of military drill. The new requirement is to take effect at the beginning of the academic year 1916–17, or upon the completion of the new drill hall.

THE first University of Pennsylvania alumni day will be celebrated on Friday, April 9, 1915, at which time the regular meeting of the directors of the General Alumni Society will be held. Under the auspices of the society an invitation has been extended to the alumni to meet the provost, trustees and faculty at this time, to see the university in session, and to make an informal inspection of its educational conditions.

THE historical department of the Catholic University of America, Washington, D. C., will begin in April, the publication of *The Catholic Historical Review*, to appear quarterly under the editorship of the Rev. Dr. Guilday.

THE Educational Alliance, East Broadway and Jefferson street, New York City, will celebrate its twenty-fifth anniversary on March 21, when addresses will be made by Mayor Mitchel, Borough President Marcus M. Marks and Justice Samuel Greenbaum, president of the institution. The primary object of the alliance is the education of immigrants to render them desirable citizens. The membership is nearly 3,000 and the educational work includes instruction in domestic arts, sciences, English, civics, physical training and other branches calculated to improve the conditions of the foreign immigrant and of the East Side generally.

THE New York City authorities report that over one hundred and thirty high-school art studios are now in operation. This is an increase of ten in a single year. To fill the vacancies in the buildings recently erected, New York is actively seeking additional art teachers. A special examination for these instructors is to be held May 10 and 11, 1915, at the Board of Education Building, New York City. The ten highest candidates upon the eligible list will be immediately appointed. To inform candidates in regard to this examination, an elaborate circular has been issued by the board of education. This gives details in regard to salaries, allowance made for previous experience, and test papers from previous examinations. In the matter of salaries, art teachers in New York City high schools are rated as high school teachers in the other departments. Both men and women are paid on the same salary schedule, which advances to a maximum of $2,650. The circular of information may be obtained by addressing James P. Haney, director of art in high schools, 500 Park Avenue, New York, N. Y.

A COMMITTEE has been organized, consisting of representatives from the faculty, the alumni, former students, and present students from all the departments of Washington University, for the purpose of drawing up a plan for the organization of a union patterned somewhat after the unions at the various larger universities, an organization which will bring together all those who have been connected with the university or are now connected with it. A part of the committee is working on a plan of organization; the rest of the committee is making arrangements for a dinner to be held at Francis Gymnasium on April 10, to which will be invited all those who have any connection or have had any connection with the university. This dinner will be the formal inauguration of the movement, which it is hoped will result in greater support of the university and its activities on the part of students and alumni.

CERTAIN donors of $10,000 or greater sums to the recently completed $2,000,000 endowment and restoration fund of Wellesley College are as follows: Rockefeller Foundation, $750,000; General Education Board, $200,000; Andrew Carnegie, $95,446.27; Mrs. D. P. Kimball, $25,000; Mrs. Russell Sage, $25,000; Galen L. Stone, $25,000; Cyrus H. K. Curtis, $22,000; Mrs. Charles A. Chapin, $10,000; Cleveland H. Dodge, $10,000; Mrs. William G. Farlow, $10,000; Charles Hayden, $10,000; George R. White, $10,000.

CONNECTED with the exercises of the ninety-fourth convocation at the University of Chi-

cago, on March 16, was the dedication of Julius Rosenwald Hall devoted to the work of the departments of geology and geography. The hall has already received most of its equipment, and with its laboratories, individual research rooms and specially devised scientific apparatus it offers remarkable opportunities for students in the various departments of geological and geographical science. The building, a gift from Mr. Julius Rosenwald, a trustee of the university, has cost approximately $260,000. The laying of the cornerstone of the new woman's gymnasium and clubhouse, Ida Noyes Hall, has been postponed till the middle of April, when it is expected that the presence of Mr. Noyes himself and a special outdoor program prepared by the women of the university will make the occasion a notable one. Construction on the building is going rapidly forward, most of the steel work being in place, and according to the contracts the cut-stone work will be finished by the middle of July. The total cost of the building will be over $450,000.

QUOTATIONS

HEALTH CONDITIONS IN THE PUBLIC SCHOOLS

In this state, under the compulsory education law, attendance at school is required during not less than eight of the most susceptible years of life, and it is reasonable that the utmost effort should be made by the authorities to safeguard the health of the hundreds of thousands of children intrusted to their care. For a long time this duty was neglected, but a better day is dawning, and although a vast amount of work remains to be done, encouraging progress is now being made. In the state of New York, exclusive of New York, Buffalo and Rochester, this function devolves upon the department of education, which, it is gratifying to know, always endeavors to secure the cooperation of the health officials. A striking indication of the advance which is taking place in its work is the appointment for the first time in this country, some two months ago, of a state medical inspector of schools, an office the department succeeded in having created by legislative enactment. At present the crying need for improved health work is in the rural schools. Not only is the general and child mortality larger in the rural portion of the state, but the proportion among children of such physical defects as tend to hinder proper development is also greater. This is likewise the case in the country at large, as is shown by the investigations of the committee on health problems of the National Council of Education, which was organized as the result of recommendations made by the American Medical Association at the Los Angeles meeting four years ago, and which is working in conjunction with a similar committee of the association. Various causes have been assigned for such a condition of affairs, but perhaps the matter can not be better summed up than in the statement of Professor Thomas D. Wood, of Columbia University, chairman of the first of these committees and a member of the other, that as a rule the farmer takes more care of his farm stock and his crops than he does of his children.

In New York and Buffalo the health department is intrusted with the care of the health of the schools, while in Rochester the department of education is charged with this duty. New York enjoys the distinction of having been the first city or community in the country to employ school nurses, now such an essential element in school health work, and Rochester of having been the first to establish a free dental clinic. At present in this city there are about 8,000 public school children to each medical inspector and 4,500 children to each school nurse, and it has been possible, with the force at command, to have only one third of the children examined each year; while, according to the accepted ideal, the minimum number should be 1,500 and the maximum, 3,000. Efforts are being made by the health department to remedy this condition by means of two experiments, so far with encouraging success. One is the wider use of private physicians, without expense to the city, in the work of physical examination; the other, which was made at the suggestion of Dr. Crampton,

director of physical training for the board of education, is the instruction of teachers in the methods of examination for contagious diseases and in the detection of gross physical defects, particularly of vision and hearing, so that children who are selected for attention may be immediately referred to the nurse or the school inspector, the latter making the diagnosis and advising appropriate care. Among the most valuable improvements of recent years are the free clinics for school children whose parents are too poor to pay for medical attendance, and lately the suggestion has been made by Dr. Richards, of the Association for Improving the Condition of the Poor, who was formerly a school inspector himself, that it would be a saving of effort and directly tend to promote efficiency in the work to have such clinics placed in the school buildings.—*New York Medical Journal.*

BOOKS AND LITERATURE

The Source, Chemistry and Use of Food Products. By E. H. S. BAILEY, Ph.D., University of Kansas. P. Blakiston's Son & Co. $1.60.

Considering the supreme importance of the subject to all of us the development of the scientific study of food products has been surprisingly slow in comparison with that of some other branches of science. Each new help should be welcomed. The feeling with which the average teacher of home science greets a new book on foods is often not so much a question of why another one appears as of wonder why it was so long delayed.

Even if a book is not well adapted for one class of users it is evident that it may serve another admirably. The present work can not be used for reference by specialists; its contents are not sufficiently detailed for the purpose. On the other hand, its 500 pages contain so many facts that a student will finish it with a feeling that the perusal has well repaid him or her. It deals with the sources of foods, their manufacture, properties, physiological values, adulterants and allied topics. No directions are given for laboratory experiments nor recipes for cooking.

The author's long official connection with the inspection and testing of foods has afforded him abundant opportunity for acquiring first-hand information. Controverted points such as the harmfulness of bleached flour, the use of saccharin and of alum in baking powders, are discussed and the conclusions reached on such points, while not dogmatically expressed, can not be reasonably objected to. All the ordinary foods are mentioned and many which are not so commonly used. The statements are clear and the book will prove of interest and value to the general reader who desires to know more of the scientific side of the food question. A copy should certainly be in every high-school and city library and may well be included in the college library as an introduction to more technical works.

E. W. ROCKWOOD

THE UNIVERSITY OF IOWA

SOCIETIES AND MEETINGS

NEW YORK STATE TEACHERS ASSOCIATION

THE New York State Teachers Association was organized in 1845. It is therefore one of the oldest organizations of teachers in the United States. Its history is rich in endeavor for the advancement of learning and for the welfare of the teaching body. There have been years fat and years lean, but the net result has been progress. The membership has fluctuated, the attendance at the annual meetings has varied widely, the intrinsic value of the discussions at the annual meetings has risen high at times, and at other times has probably dropped below the level of utility, but throughout the long period the association has had in mind persistently and aggressively the improvement of the schools, the professional growth of the individual teacher, and the promotion of the educational interests of New York state.

In 1911 it was decided to change the date of the annual convention to Thanksgiving week, thus changing it from a holiday matter to a more serious educational meeting. Teachers are now encouraged to look upon attendance at the annual meeting as serious educa-

tional business for which their salaries are paid. The attendance has each year increased, the spirit has become more and more professional, and the benefit to the profession has been proportionate.

In 1912 the executive committee, meeting in Syracuse in Christmas week to transact the business of the association and to arrange for the annual meeting of 1913, decided upon a reorganization program. The basis of this decision may be found in a condition that has long been prevalent in teachers' organizations and may be stated briefly under the following heads: Fluctuating membership, local influence in association affairs, insistent demands for association activities looking to legislation on pensions, minimum salary, tenure of office; and a desire to improve the general welfare of teachers.

Unstable Membership

New York being a large state, it is physically impossible to have all teachers of the state meet in a single convention. The traveling expenses are prohibitive to the low-salaried teachers who live from fifty to five hundred miles away; no city can accommodate, either by hotels or by convention halls, a convention of 45,000 persons. The annual convention is necessarily a peripatetic body, meeting in successive years in the larger cities of the state, New York, Buffalo, Rochester, Syracuse, Albany. No other city is now able to entertain so large a body. It was found that membership was about 5 per cent. permanent and statewide, 95 per cent. local and periodic. By local is meant that section of the state lying approximately within a fifty-mile radius of the convention city. The obvious result must be that the membership changes annually. The Buffalo meeting in 1912 had a Buffalo or western New York membership; the Albany meeting in 1911 an eastern New York membership; that is, the Albany membership of 1911 lapsed almost wholly in 1912, and was replaced by a Buffalo membership, which again lapsed in 1913. Lack of permanency in membership makes a permanent and consistent policy impossible. Furthermore, it brings the benefits of the association only to those teachers who can attend the convention, and such attendance at best must be infrequent—only when the convention comes near.

Local Influence Dominates

A local membership of 95 per cent. necessarily means that one locality has undue power over the affairs of an association that professes to be a state body. Buffalo in 1912, Albany in 1911, Rochester in 1910, New York City in 1909, controlled the policies of this state body. This is undemocratic, as well as unprofessional, and supremely undesirable. Furthermore such a state of affairs discredits the teachers whenever they try to secure remedial legislation. The legislature can not properly recognize a body that claims state-wide influence on the basis of a membership that is 95 per cent. local, and only 5 per cent. general.

Legislation Demanded

There was a well-defined demand for improved pension legislation; for new and original acts providing a minimum salary for teachers and guaranteeing the teachers tenure of position. It was found that some rural communities still paid as low as $6.50 per week to teachers who met the strict requirements of the state system of certification. It was also apparent that teachers lose their positions for insufficient reasons. Reasonable legislation was urged therefore and the State Teachers Association was asked to bring its influence to bear.

The Welfare of Teachers

A large number of matters was included by the executive committee under the head of Teachers' Welfare: School-houses and schoolrooms have poor ventilation; teachers have no facilities for necessary rest at recess periods during the day; country teachers have no satisfactory boarding and rooming facilities; there are apparently certain physical ills to which teachers are peculiarly subject, ills which are gaining recognition as vocational diseases, such as chronic throat affections, nervous disorders, dyspepsia, etc. The size of classes

forced upon teachers vary from 20 to 120; some cities grant sabbatical years for rest and study, other cities wear out teachers rapidly without such provision; summer work in school and college is becoming more and more necessary to win consistent promotion; professional work is demanding and receiving standardization without much regard for the teacher's ability to meet the standards of stop-watch, statistical record and examination. In almost every one of these questions the teacher suffers because the community is ignorant of the facts. In fact, teachers themselves lack the exact knowledge necessary to make intelligent provision for their own physical welfare. Information on a large scale is necessary and can be secured only by some large agency such as the State Teachers Association.

Here then was a program to which the teachers of New York state might well address themselves with energy. The first step was a reorganization of the State Association, and this was accomplished by the executive committee during the early months of 1913. At the Syracuse meeting of 1913 a new constitution was presented, and adopted. It has the following important provisions:

A Representative Body

The business of the association is to be transacted by an "assembly of delegates" constituted as follows:

1. Any territory constituting the jurisdiction of a district superintendent, of a village or city superintendent, and of a district superintendent in New York City shall constitute a territorial unit of representation in the assembly of delegates.

2. The members of this association residing or teaching within such territorial limit shall constitute a local division of this association and shall be entitled to choose at least two representatives to the assembly of delegates.

3. In case the membership of any local division shall be in excess of one hundred members, then such local division shall be entitled to elect one additional delegate for each one hundred members above the first one hundred or major fraction thereof.

4. Delegates shall not be entitled to seats in the permanent organization of the assembly of delegates until credentials in the form of a certificate of election, signed by the secretary of the local division, shall have been approved by a committee on credentials, appointed by the president of the association.

5. The members of this association (not less than ten in number) belonging to the official teaching staff of the University of the State of New York, or the faculty of any duly recognized university, college, independent professional school, state normal school or state institution in this state shall be entitled to elect one delegate to the annual meeting, providing that such delegate be chosen at a meeting called by the administrative head of such institution and organized as provided for local divisions. Members of such staff or faculty shall not be entitled to vote for delegates in meetings of their respective local divisions.

Matters of Organization

The officers consist of a president, a vice-president, a secretary-treasurer, and an executive committee of nine members. These officers, except the president, are elected from nominations made by a duly appointed nominating committee. The president is nominated from the floor, thus giving the utmost freedom of choice. The secretary-treasurer is elected annually and receives such compensation as the executive committee may decide. It was the hope of the reorganization committee that this office would become permanent and thus guarantee a consistent policy for the association. Ultimately this office will require all the time of the incumbent.

The time and place of the annual meeting shall be determined annually by the executive committee.

"The Journal"

The publication of an "official journal" is prescribed by the constitution. It shall publish the proceedings of the annual meeting.

This *Journal* is now issued in the months of January–June and September–November. It has set a high standard by its articles to date, as well as in its educational news items. It meets a growing demand for an official medium

for the discussion of current educational policies and practises. No one item in the reorganization scheme will do so much to unite the teachers of New York state; and no other agency can do so much for our professional progress. There is no subscription fee. The *Journal* is sent free to every member of the association. In this way it becomes a reasonable expectation that every teacher in the state will read the *Journal* and will be drawn closer to the common professional interests.

Results of Reorganization

It is early to draw any extensive conclusions. The assembly of delegates has met but once; the *Journal* has been issued only since February, 1914; the business career of the new mode has been brief. We may nevertheless speak confidently of a few things. The association is now, as never before, a state organization. Every teacher in the state may be represented in the deliberations of the annual convention. The delegate from every district can make the wishes of his district felt by his voice and his vote, and this vote is of equal value, whether from sparsely settled rural community or from densely populated city. Furthermore, the delegate will return from the annual meeting and disseminate the important matters through his district. This was illustrated by teachers' meetings in remote parts of the state last December, when delegates brought home the fruits of the Albany convention. Thus the benefits of the association are brought to the teachers who live remote from the convention city. And the *Journal* from month to month brings to these teachers the best things that were said on the convention program, making the connection between the individual teacher and the association as nearly perfect as can be in so large a state.

There is one point, however, where the State Teachers Association can and should draw still closer to the individual teacher. At present the annual convention, because of its size, can go only to the larger cities named above. This means that teachers can personally attend these meetings only once in four or five years, that is, when the convention comes near enough. From some parts of the state, moreover, the convention is always so far removed that teachers find it a financial hardship to attend. Into these sections the association can now go only through the delegate system and through the *Journal*. More is necessary; certainly more is desirable.

The association can organize a series of sectional conventions each year, drawing together the teachers from large areas into such cities as Yonkers, Binghamton, Elmira, Jamestown, Watertown, Plattsburg, Albany, Poughkeepsie, Utica, Syracuse, Rochester and Buffalo. Such sectional meetings will bring a convention city within reach of every teacher of the state. The twelve sectional conventions can be arranged in such manner that the same program talent can be used successively in half of the meetings, thus saving the association expense and conserving the time of the speakers. It would be an inspiration to the teachers of the state to have a convention week with twelve sectional conventions running in as many different cities. Six of these conventions could run from Monday to Wednesday, the other six from Thursday to Saturday. A speaker could then make a tour of the state, giving an address in a different city each day, and reach fully 30,000 teachers in the convention week. With this scheme the Assembly of Delegates could meet periodically with various sectional conventions and in the course of twelve years reach every section of the state.

The benefits of this sectional scheme are easily apparent. It is the only way by which approximately all the teachers of the state can meet together. It is the only means by which the schools can all be made to feel the rhythm of a unified educating force moving forward. And that it will treble the present membership is, I believe, a conservative estimate.

May we not hope that all teachers, all organizations of teachers throughout the state, will join this movement for the teachers' welfare and educational advancement? Only when we move forty thousand strong can we secure the highest possibilities of our profession. We should not be content with less.

A. R. Brubacher